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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,220	11/07/2001	Jason K. Trotter	ITWO:0016	5660
7590 12/28/2007 Tait R. Swanson Fletcher, Yoder & Van Someren P.O. Box 692289 Houston, TX 77269-2289			EXAMINER FERGUSON, MICHAEL P	
			ART UNIT 3679	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/066,220

Applicant(s)

TROTTER ET AL.

Examiner

Michael P. Ferguson

Art Unit

3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 75,78,79,82-87,95-99,102-117 and 122-131 is/are pending in the application.
- 4a) Of the above claim(s) 79,84,85,87,97,98,104-114,117,122 and 125 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 75,78,82,83,86,95,96,99,102,103,123,124 and 126-131 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 07 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species 2 Subspecies a, Figures 4-6 and 10, claims 75, 78, 82, 83, 86, 95, 96, 99, 102, 103, 115, 116, 123, 124 and 126-131, in the reply filed on March 26, 2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 79, 84, 85, 87-94, 97, 98, 101, 104-114, 117-122 and 125 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species and subspecies, there being no allowable generic or linking claim. Election was made with traverse in the reply filed on March 26, 2007.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 75, 78, 82, 102, 103, 115, 116, 126 and 127 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 75 (lines 1-14) recites "A system, comprising: an integral automotive linkage... comprising: a hollow elongated member... ; a first joint member... ; and a second joint member". Claim 75 fails to clearly recite what plurality of elements are assembled together to constitute the claimed system; only one element of such system has been claimed, the automotive linkage. Accordingly, one is unable to determine

what constitutes a "system" as recited in claim 75 since a plurality of elements have not been claimed; thus one is unable to determine the metes and bounds of such claim.

Claims 78, 82, 102, 103, 115, 116, 126 and 127 depend from claim 75 and are likewise rejected.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 95 and 123 are rejected under 35 U.S.C. 102(b) as being anticipated by Holding (GB 2 17 478).

As to claim 95, Holding discloses a system, comprising:

a family of linkage joints **13,73** having different geometries and joint mechanisms, wherein each of the family of linkage joints has a standard attachment portion configured to mate with a uniform lengthwise cross-section of an elongated hollow linkage **10**, and configured to mount integrally with a component of a system of interconnected machine elements,

wherein the standard attachment portion comprises a first set of sides configured to mate mutually exclusively with a second set **30,32** of sides and a different third set **31,33** of sides off a multi-sided interior of the uniform lengthwise cross-section (Figures 4-9).

As to claim 123, Holding discloses a system wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed multi-sided closed geometries (Figure 4).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 96, 99, 124 and 130 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holding.

As to claim 96, Holding discloses a system wherein the standard attachment portion **13** comprises a rectangular cross-sectional geometry **30,32,31,33** (Figure 6). Holding fails to disclose a system wherein the standard attachment portion comprises a square geometry. Holding does not disclose any structural or functional significance as to the specific cross-sectional geometry of the standard attachment portion, other than that the linkage joints **13,73** matingly engage within sockets in the hollow linkage **10** (Figure 6).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the

system disclosed by Holding wherein the standard attachment portion comprises a square geometry as Holding does not disclose any structural or functional significance as to the specific cross-sectional geometry of the standard attachment portion, other than that the linkage joints matingly engage within sockets in the hollow linkage, and as such practice is a design consideration within the skill of the art.

As to claim 99, Holding discloses a system, comprising:

a linkage **10** having a uniform socket geometry along the entire length of the linkage, wherein the uniform socket geometry comprises a multi-sided interior defined by a plurality of superimposed rectangles;

a first joint **13,73** coupled to the uniform socket geometry at a first end of the linkage via a first set **30,32** of mating walls defined by a the plurality of superimposed rectangles; and

a second joint **13,73** coupled to the uniform socket geometry at a second end of the linkage opposite the first end via a second set **31,33** of mating walls defined by the plurality of superimposed rectangles, wherein the first and second set of mating walls are different from one another (Figures 4-9).

Holding fails to disclose a system wherein the linkage having a uniform socket geometry defined by a plurality of superimposed squares. Holding does not disclose any structural or functional significance as to the specific cross-sectional geometry of the linkage, other than that the first and second joints **13,73** matingly engage within sockets in the linkage **10** (Figure 6).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Holding wherein the linkage has a uniform socket geometry defined by a plurality of superimposed squares as Holding does not disclose any structural or functional significance as to the specific cross-sectional geometry of the linkage, other than that the first and second joints matingly engage within sockets in the linkage, and as such practice is a design consideration within the skill of the art.

As to claim 124, Holding discloses a system wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed rectangles **30,32,31,33** (Figure 4). Holding fails to disclose a system wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed squares. Holding does not disclose any structural or functional significance as to the specific cross-sectional geometry of the hollow linkage, other than that the linkage joints **13,73** matingly engage within sockets in the hollow linkage **10** (Figure 6).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the

system disclosed by Holding wherein the linkage has a uniform socket geometry defined by a plurality of superimposed squares as Holding does not disclose any structural or functional significance as to the specific cross-sectional geometry of the hollow linkage, other than that the linkage joints matingly engage within sockets in the hollow linkage, and as such practice is a design consideration within the skill of the art.

As to claim 30, Holding discloses a system wherein the first set of sides comprises four sides defining a first rectangle, the second set **31,33** of sides comprises four sides defining a second rectangle, the third set of sides comprises four sides defining a third rectangle **31,33**, the first rectangle is configured to mate mutually exclusively with the second rectangle without the third rectangle, and the first rectangle is configured to mate mutually exclusively with the third rectangle without the second rectangle (Figure 6). Holding fails to disclose a system wherein the first, second and third set of sides each comprise four sides defining a squares. Holding does not disclose any structural or functional significance as to the specific cross-sectional shape of the hollow linkage of linkage joints, other than that the linkage joints **13,73** matingly engage within sockets in the hollow linkage **10** (Figure 6).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Holding wherein the first, second and third set of sides each

comprise four sides defining a square as Holding does not disclose any structural or functional significance as to the specific cross-sectional shape of the hollow linkage or linkage joints, other than that the linkage joints matingly engage within sockets in the hollow linkage, and as such practice is a design consideration within the skill of the art.

9. Claims 75, 78, 82, 83, 86, 95, 96, 99, 102, 103, 115, 116, 123, 124 and 126-131 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaines et al. (US 4,189,249) in view of Warner (US 5,921,695).

As to claims 75 and 115, Gaines et al. disclose a system, comprising:

an integral automotive linkage configured to mount within an automobile to link two or more elements integrally together in an assembly, comprising:

a hollow elongated member **20** having a constant cross-section along the entire length of the hollow elongated member, wherein the constant cross-section comprises an interior defining first and second sockets at respective first and second opposite ends of the hollow elongated member;

a first joint member **10** coupled to the first socket, wherein the first joint member comprises an attachment portion having a perimeter mated with the interior of the first socket; and

a second joint member **16** coupled to the second socket, wherein the second joint member comprises another attachment portion having another perimeter mated with the interior of the second socket (Figure 2).

Gaines et al. fail to disclose a system comprising a linkage comprising: a hollow elongated member having a constant cross-section comprising a multi-sided interior

comprising greater than four sides defining a plurality of angularly offset socket positions; a first joint member comprising an attachment portion having a multi-sided perimeter mated with the multi-sided interior of the first socket, the multi-sided perimeter having fewer sides than the multi-sided interior, and the multi-sided perimeter mating with different sides of the multi-sided interior in the plurality of angularly offset socket positions; and a second joint member comprising another attachment portion having another multi-sided perimeter mated with the multi-sided interior of the second socket, the other multi-sided perimeter having fewer sides than the multi-sided interior, and the other multi-sided perimeter mating with different sides of the multi-sided interior in the plurality of angularly offset socket positions; wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed multi-sided closed geometries.

Warner teaches a system comprising a linkage comprising: a hollow elongated member **11** having a constant cross-section comprising a multi-sided interior **10** comprising greater than four sides defining a plurality of angularly offset socket positions; and a first joint member **13** comprising an attachment portion **14** having a multi-sided perimeter mated with the multi-sided interior of the first socket, the multi-sided perimeter having fewer sides than the multi-sided interior, and the multi-sided perimeter mating with different sides of the multi-sided interior in the plurality of angularly offset socket positions; wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed multi-sided closed geometries; the multi-sided interior **10** of hollow elongated member **11** and the multi-sided perimeter of first joint member attachment portion **14** providing the convenience of assembling the joint

member within the elongated member at one of a wide range of preselected angular positions while ensuring proper angular alignment between the elements, and providing a more secure connection between the first joint and the elongated member, the angular sides preventing relative rotation between the elements (Figure 3, column 1 lines 9-10 and 39-52, column 2 lines 43-47). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Gaines et al. wherein the hollow elongated member comprises a multi-sided interior and the first and second joint members each comprise attachment portions comprising a multi-sided perimeter as taught by Warner in order to provide the convenience of assembling the joint members within the elongated member at one of a wide range of preselected angular positions while ensuring proper angular alignment between the elements, and to provide a more secure connection between the joint members and the elongated member, the angular sides preventing relative rotation between the elements.

As to claim 78, Gaines et al. disclose a system wherein the first and second joint members **10,16** comprise the same attachment portion **14,18** (Figure 1).

As to claim 82, Gaines et al. disclose a system wherein the constant cross-section is a uniformly extruded geometry along the entire length of the hollow elongated member **20** (Figure 1).

As to claims 83, 128 and 129, Gaines et al. disclose a system, comprising:

an elongated linkage **20** comprising a first end, a second end, and a uniform cross-section from the first end to the second end configured to mount integrally within an automobile; and

a family of joints **10,16** each comprising a modular attachment portion **14,18** configured to mate with the uniform cross-section at the first or second end of the elongated automotive linkage (Figure 2).

Gaines et al. fail to disclose a system comprising a linkage comprising a uniform cross-section comprising a geometry characterized by a plurality of superimposed squares that are rotated about 45 degrees relative to one another; wherein each of the plurality of squares defines a different angular socket position having a different set of four walls; wherein each modular attachment portion mutually exclusively mates with different sets of walls of the plurality of superimposed squares.

Warner teaches a system comprising a linkage **11** comprising a uniform cross-section **10** comprising a geometry characterized by a plurality of superimposed hexagons that are rotated about 45 degrees relative to one another; wherein each of the plurality of hexagons defines a different angular socket position having a different set of six walls; and a joint **13** comprising a modular attachment portion **14** mutually exclusively mating with different sets of walls of the plurality of superimposed hexagons; the multi-sided interior **10** of hollow elongated linkage **11** and the multi-sided perimeter of joint attachment portion **14** providing the convenience of assembling the joint within the elongated linkage at one of a wide range of preselected angular positions while

ensuring proper angular alignment between the elements, and providing a more secure connection between the joint and the elongated linkage, the angular sides preventing relative rotation between the elements (Figure 3, column 1 lines 9-10 and 39-52, column 2 lines 43-47). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Gaines et al. wherein the hollow elongated linkage comprises a multi-sided interior and the first and second joints each comprise attachment portions comprising a multi-sided perimeter as taught by Warner in order to provide the convenience of assembling the joints within the elongated linkage at one of a wide range of preselected angular positions while ensuring proper angular alignment between the elements, and to provide a more secure connection between the joints and the elongated linkage, the angular sides preventing relative rotation between the elements.

Gaines et al. in view of Warner fails to disclose a system wherein the uniform cross-section comprises a geometry characterized by a plurality of superimposed squares. Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the elongated linkage, other than that the joint **14** matingly engages within the socket in the elongated linkage **11** (Figure 3).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the

system disclosed by Gaines et al. in view of Warner wherein the uniform cross-section comprises a geometry characterized by a plurality of superimposed squares as Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the elongated linkage, other than that the joint matingly engage within sockets in the elongated linkage, and as such practice is a design consideration within the skill of the art.

As to claim 86, Gaines et al. disclose a system wherein the uniform cross-section comprises a uniform hollow interior (Figure 1).

As to claims 95 and 123, Gaines et al. disclose a system, comprising:

a family of linkage joints **10,16** having different geometries and joint mechanisms, wherein each of the family of linkage joints has a standard attachment portion **14,18** configured to mate with a uniform lengthwise cross-section of an elongated hollow linkage **20**, and configured to mount integrally with a component of a system of interconnected machine elements (Figure 1).

Gaines et al. fail to disclose a system wherein the standard attachment portion comprises a first set of sides configured to mate mutually exclusively with a second set of sides and a different third set of sides of a multi-sided interior of the uniform lengthwise cross-section; wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed multi-sided closed geometries.

Warner teaches a system comprising a linkage joint **13** having a standard attachment portion **14** comprising a first set of sides configured to mate mutually exclusively with a second set of sides **12** and a different third set of sides **12** of a multi-

sided interior **10** of the uniform lengthwise cross-section of an elongated hollow linkage **11**; wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed multi-sided closed geometries; the multi-sided interior **10** of elongated hollow linkage **11** and the multi-sided perimeter of linkage joint attachment portion **14** providing the convenience of assembling the joint within the elongated linkage at one of a wide range of preselected angular positions while ensuring proper angular alignment between the elements, and providing a more secure connection between the joint and the elongated linkage, the angular sides preventing relative rotation between the elements (Figure 3, column 1 lines 9-10 and 39-52, column 2 lines 43-47). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Gaines et al. wherein the elongated hollow linkage comprises a multi-sided interior and the first and second joints each comprise attachment portions comprising a multi-sided perimeter as taught by Warner in order to provide the convenience of assembling the joints within the elongated linkage at one of a wide range of preselected angular positions while ensuring proper angular alignment between the elements, and to provide a more secure connection between the joints and the elongated linkage, the angular sides preventing relative rotation between the elements.

As to claim 96, Gaines et al. in view of Warner fails to disclose a system wherein the standard attachment portion comprises a square geometry. Warner does not disclose any structural or functional significance as to the specific cross-sectional shape

of the linkage joints, other than that the joint **14** matingly engages within the socket in the elongated linkage **11** (Figure 3).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Gaines et al. in view of Warner wherein the standard attachment portion comprises a square geometry as Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the linkage joints, other than that the joint matingly engage within sockets in the elongated linkage, and as such practice is a design consideration within the skill of the art.

As to claim 99, Gaines et al. disclose a system, comprising:

a linkage **20** having a uniform socket geometry along the entire length of the linkage;

a first joint **10** coupled to the uniform socket geometry at a first end of the linkage via a first mating wall; and

a second joint **16** coupled to the uniform socket geometry at a second end of the linkage opposite the first end via a second mating wall (Figure 1).

Gaines et al. fail to disclose a system comprising: a linkage having a uniform socket geometry comprising a multi-sided interior defined by a plurality of superimposed

squares; a first joint coupled to the uniform socket geometry at a first end of the linkage via a first set of mating walls defined by the plurality of superimposed squares; and a second joint coupled to the uniform socket geometry at a second end of the linkage opposite the first end via a second set of mating walls defined by the plurality of superimposed squares, wherein the first and second sets of mating walls are different from one another.

Warner teaches a system comprising a linkage **11** having a uniform socket geometry **10** comprising a multi-sided interior defined by a plurality of superimposed hexagons; and a first joint **13** coupled to the uniform socket geometry at a first end of the linkage via a first set of mating walls **12** defined by the plurality of superimposed hexagons; the multi-sided interior **10** of linkage **11** providing the convenience of assembling the joint within the linkage at one of a wide range of preselected angular positions while ensuring proper angular alignment between the elements, and providing a more secure connection between the joint and the linkage, the angular sides preventing relative rotation between the elements (Figure 3, column 1 lines 9-10 and 39-52, column 2 lines 43-47). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Gaines et al. wherein the linkage comprises a multi-sided interior as taught by Warner in order to provide the convenience of assembling the joints within the linkage at one of a wide range of preselected angular positions while ensuring proper angular alignment between the elements, and to provide a more secure connection

between the joints and the linkage, the angular sides preventing relative rotation between the elements.

Gaines et al. in view of Warner fails to disclose a system wherein the uniform socket geometry comprises a multi-sided interior defined by a plurality of superimposed squares. Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the linkage, other than that the joint **14** matingly engages within the socket in the elongated linkage **11** (Figure 3).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Gaines et al. in view of Warner wherein the uniform socket geometry comprises a multi-sided interior defined by a plurality of superimposed squares as Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the linkage, other than that the joint matingly engage within sockets in the linkage, and as such practice is a design consideration within the skill of the art.

As to claim 102, Gaines et al. disclose a system wherein the second joint **16** comprises a polygonal receptacle joint **17,19** (polygonal-shaped joint ends **17,19** constitute polygonal receptacles; Figure 1).

As to claim 103, Gaines et al. disclose a system wherein the first joint **10**, or the second joint **16**, or both, comprise a circular receptacle joint (circular interior cavities of joint housings **10,16** constitute circular receptacles; Figure 1).

As to claim 116, Gaines et al. in view of Warner fails to disclose a system wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed squares. Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the elongated member, other than that the joint member **14** matingly engages within the socket in the elongated member **11** (Figure 3).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Gaines et al. in view of Warner wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed squares as Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the elongated member, other than that the joint member matingly engage within sockets in the elongated member, and as such practice is a design consideration within the skill of the art.

As to claim 124, Gaines et al. in view of Warner fails to disclose a system wherein the multi-sided interior comprises a geometry characterized by a plurality of

superimposed squares. Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the elongated linkage, other than that the linkage joint **14** matingly engages within the socket in the elongated linkage **11** (Figure 3).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Gaines et al. in view of Warner wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed squares as Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the elongated linkage, other than that the joint member matingly engage within sockets in the elongated linkage, and as such practice is a design consideration within the skill of the art.

As to claim 126, Gaines et al. in view of Warner fails to disclose a system wherein the constant cross-section is defined by squares that are rotated angularly about the axis of the hollow elongated member. Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the elongated member, other than that the joint member **14** matingly engages within the socket in the elongated member **11** (Figure 3).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Gaines et al. in view of Warner wherein the constant cross-section is defined by squares that are rotated angularly about the axis of the hollow elongated member as Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the elongated member, other than that the joint member matingly engage within sockets in the elongated member, and as such practice is a design consideration within the skill of the art.

As to claim 127, Gaines et al. in view of Warner fails to disclose a system wherein the constant cross-section is defined by squares that are rotated about 45 degrees about the axis of the hollow elongated member. Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the elongated member, other than that the joint member **14** matingly engages within the socket in the elongated member **11** (Figure 3).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the

system disclosed by Gaines et al. in view of Warner wherein the constant cross-section is defined by squares that are rotated angularly about 45 degrees about the axis of the hollow elongated member as Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the elongated member, other than that the joint member matingly engage within sockets in the elongated member, and as such practice is a design consideration within the skill of the art.

As to claim 130, Warner discloses a system wherein the first set **14** of sides comprises six sides defining a first hexagon, the second set of sides **12** comprises six sides defining a second hexagon, the third set of sides **12** comprises six sides defining a third hexagon, the first hexagon is configured to mate mutually exclusively with the second hexagon without the third hexagon, and the first hexagon is configured to mate mutually exclusively with the third hexagon without the second hexagon (Figure 3). Gaines et al. in view of Warner fails to disclose a system wherein the first, second and third set of sides each comprise four sides defining a square. Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the linkage joints or the hollow elongated linkage, other than that the linkage joint **14** matingly engages within the socket in the elongated linkage **11** (Figure 3).

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the

system disclosed by Gaines et al. in view of Warner wherein the first, second and third set of sides each comprise four sides defining a square as Warner does not disclose any structural or functional significance as to the specific cross-sectional shape of the elongated linkage, other than that the joint member matingly engage within sockets in the elongated linkage, and as such practice is a design consideration within the skill of the art.

As to claim 131, Gaines et al. disclose an automobile linkage, comprising:

at least one female joint member **10,16** comprising a socket and a pin **14,18**; and

an elongated hollow member **20** comprising a hollow interior having a constant cross-section defining first and second sockets at respective first and second opposite ends of the elongated hollow member for receiving the at least one female joint member (Figure 1).

Gaines et al. fails to disclose a linkage comprising: a female joint member comprising a socket and a pin having a polygonal cross-section; and an elongated hollow member comprising a plurality of peripheral walls defining a hollow multi-sided interior, the multi-sided interior having a greater number of sides than the polygonal cross-section, the hollow interior comprising a plurality of angularly offset socket positions, each socket position having the polygonal cross-section defined by a different corresponding set of peripheral walls; wherein the plurality of sockets are concentrically superimposed upon each other about the longitudinal axis of the elongated hollow member to define the angularly offset socket positions; wherein the female joint member

is rigidly fixed in a selected socket position by the pin of the female joint member being inserted into the hollow interior of the elongated hollow member in a selected angular orientation as to abut only a selected corresponding set of peripheral walls.

Warner teaches a linkage comprising: a female joint member **13** comprising a socket and a pin **14** having a polygonal cross-section; and an elongated hollow member **11** comprising a plurality of peripheral walls **12** defining a hollow multi-sided interior **10**, the multi-sided interior having a greater number of sides than the polygonal cross-section, the hollow interior comprising a plurality of angularly offset socket positions, each socket position having the polygonal cross-section defined by a different corresponding set of peripheral walls; wherein the plurality of sockets are concentrically superimposed upon each other about the longitudinal axis of the elongated hollow member to define the angularly offset socket positions; wherein the female joint member is rigidly fixed in a selected socket position by the pin of the female joint member being inserted into the hollow interior of the elongated hollow member in a selected angular orientation as to abut only a selected corresponding set of peripheral walls; the multi-sided interior **10** of elongated hollow member **11** and joint member **13** having a polygonal cross-section providing the convenience of assembling the joint member within the hollow member at one of a wide range of preselected angular positions while ensuring proper angular alignment between the elements, and providing a more secure connection between the joint member and the hollow member, the angular sides preventing relative rotation between the elements (Figure 3, column 1 lines 9-10 and 39-52, column 2 lines 43-47). Accordingly, it would have been obvious to one having

ordinary skill in the art at the time the invention was made to modify the system disclosed by Gaines et al. wherein the linkage comprises a multi-sided interior and the joint member has a polygonal cross-section as taught by Warner in order to provide the convenience of assembling the joint member within the elongated hollow member at one of a wide range of preselected angular positions while ensuring proper angular alignment between the elements, and to provide a more secure connection between the joint member and the hollow member, the angular sides preventing relative rotation between the elements.

Response to Arguments

10. Applicant's arguments with respect to claims 75, 78, 82, 83, 86, 95, 96, 99, 102, 103, 115, 116, 12, 124 and 126-131 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. The following patent shows the state of the art with respect to linkage assemblies:

Archuleta (US 5,768,960) and Jang (US 5,493,880) are cited for pertaining to assemblies comprising a hollow elongated member having a multi-sided interior defining a socket with a plurality of offset socket positions, and a joint member coupled to the socket.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. The newly added limitations of "defining a plurality of angularly offset

socket positions”, “the multi-sided perimeter has fewer sides... offset socket positions”, and “the other multi-sided perimeter... offset socket positions” in claim 75 (lines 7-13 and 16-18); “that are rotated about 45 degrees relative to one another” in claim 83 (line 5); “wherein the standard attachment portion comprises a first set of sides... of a multi-sided interior of” in claim 95 (lines 6-8); and “via a first set of mating walls defined by the plurality of superimposed squares” and “via a second set of mating walls... are different from one another” in claim 99 (lines 5-6 and 9-11) necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Ferguson whose telephone number is (571)272-7081. The examiner can normally be reached on M-F (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571)272-7087. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


MPF

12/20/07


ROBERT J. SANDY
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